

EFFECT OF NURSING INTERVENTION PROGRAM ON PSYCHOLOGICAL STRESS AND COMPETENCIES AMONG PARENTS OF CHILDREN WITH LEARNING DISABILITIES

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Abstract:

Learning disabilities (LDs) have become one of the most frequent challenges for teachers, the family, and for the students who have them. It is imperative to note that one of the most common problems experienced by school children is learning disability. **Aim;** This study aimed to evaluate the effect of nursing intervention program on psychological stress and competences among parents of children with learning disabilities. **Study design;** a quasi-experimental design was utilized to conduct this study. **Setting;** this study was conducted at four private centers of learning disabilities at Zagazig city (the most important center in each zone (eastern, western, northern, southern) Namaa center, Ataa center, early intervention & child development center, and tamkeen center. **Subject;** convenient sample of 70 parents of children with L.D were chosen for conducting this study. **Data collection tools:** 1) Socio-demographic data sheet, 2) parent stress index, 3) parenting sense of competence scale. **Results;** The results of this study showed there was significant difference in the stress and competence level during post program implementation compared to preprogram implementation. **Conclusion;** the study concluded that parents of children with L.D had high levels of psychological stress and low level of competences, which improved after implementation of the nursing intervention program with a highly statistical significance difference (p value ≤ 0.01). **Recommendation;** The current study recommended that, structured psycho-educational program should be developed for parents having children with L.Ds to increase their knowledge about caring and dealing with L.Ds children.

Index Terms: Children, Competence, Intervention, LDs, Nursing, Parents, Stress.

INTRODUCTION

Learning disabilities (LD) have become one of the most frequent challenges for teachers, the family, and for the students who have them. It is imperative to note that one of the most common problems experienced by school children is learning disability. The term "learning disabilities" is used to describe consistent and prolonged problems in learning. These problems are generally in the areas of reading, writing, spelling and mathematics. Learning disabled children excel in some areas rather than the problem area. There are others who are slow in acquiring school-related skills [1]. The influence of parenting stress on parenting behaviors and child behavior outcomes has also been a focus within

the field of child development. Parenting stress effects parenting behavior and the quality of dyadic parent–child interactions. Further, the relationship between parenting stress and child behavior problems is bidirectional. That is, child externalizing and internalizing problems lead to increases in parenting stress over time, and high parenting stress leads to increases in externalizing and internalizing problems in children [2]. Parenting competence defined as skills, knowledge, comfort, and satisfaction regarding the successful and effective performance of parenting roles. It is important that nurse's awareness of the effective factors in parenting competence among parents of autistic children that they can take basic steps in identifying the problems of these parents, promoting parenting competence and subsequently promote the quality of life of parents and the child with disabilities [3]. Parent Training Programs (PTPs) have also been reported to strengthen parental psychosocial well-being and skills and thereby reduce stress and the use or need for medical and social services by these families. PTPs have demonstrated a reduction in the prevalence of parental depression, stress, and coercive parenting [4].

SIGNIFICANCE OF THE STUDY:

The prevalence of learning disability among primary school children in Egypt was 16.5%. Also, the prevalence of specific reading disability (SRD) among the elementary school children (grade 1 to 3) is 1%, and the male to female ratio was 2.7% to 1%. The prevalence was far lower than that reported in western countries [5]. Parents have an important role to play in a child's psychosocial development. Consequently, a number of parenting interventions for parents of young children with learning disabilities have been designed and evaluated globally over the past few decades. These interventions are designed to improve a parent's ability to successfully parent their children, through training, support or education, and the main goal is to influence the parent's psychosocial well-being [6].

AIM OF THE STUDY:

This study aimed to evaluate the effect of nursing intervention program on psychological stress and competencies among parents of children with learning disabilities

SUBJECT AND METHODS:

A- Research design:

A quasi-experimental research design (one group pre/post-test) was conducted to achieve the aim of this study.

B- Setting:

This study was conducted at four private centers of learning disabilities at Zagazig city (the most important center in each zone (eastern, western, northern, southern) Namaa center, Ataa center, early intervention & child development center, and tamkeen center.

C- Subject:

Sample was collected from all parents of children with learning disabilities attending regularly any of four previously mentioned settings over a six months period. It was collected from 70 parents of those children (all of attending regularly parents) according to the following criteria.

*Inclusion criteria for parents:

- 1- Ages from 20 years to above
- 2- Both sexes
- 3- Parents living in the same dwelling

*Inclusion criteria for children:

- 1- School age children range between 6 to 12 years old.
- 2- Both sexes.
- 3- Normal I.Q.
- 4- Free from visual problems, hearing problems or psychiatric problems.

D- Tools of data collection

Tool (1): Socio-demographic data sheet:-

It was designed by the researcher. It was composed of two parts :

- a) For children: it included age, sex, education, child order.....etc.
- b) For parents: it included age, sex, marital status, family members, residence, and level of education, occupation, and family income.

Tool (2) parent stress index:

It was developed by Abidin, (1983), to measure parenting stress of children with chronic illness. Arabic version was translated by Elbeblawy, (1988), was utilized in this study. It consisted of 99 items. Each item presented with five graded response: strongly agree, agree, uncertainty, disagree, and strongly disagree. The items are grouped into two main groups of stressor, namely child related- stress and parent-related stress.

Child related domain: this domain assesses the presence of child behaviors and characteristics that are stressful to parents. It includes six subscales, namely child

distractibility and hyperactivity (9 items), child reinforcing parents (6 items), child's mood (5 items), child acceptability to parent (7 items), child adaptability (10 items), and child demandingness (9 items).

Parent related domain: this domain assesses parents stressors related to personal adjustment and family functioning. It has seven subscales, namely parent sense of competence (13 items), parent attachment (7 items), restriction of parental role (7 items), parental depression (9 items), relationship with spouse (6 items), social isolation (6 items) and parental health (5 items)

Tool (3): Parenting sense of competence scale (PSOC):

It was developed by Johnson and Mash`s, (1989). Is a 16-item questionnaire measuring parental satisfaction and efficacy and assess how confident parents feel in their ability to handle their child's problems. It yields two subscales: (a) (satisfaction), addressing parent self-perceptions regarding the skills and understanding required to be a good parent (9 items) and (b) (efficacy), the degree to which respondents feel comfortable and capable in their roles as parents and the value they assign to the parental role (7 items).

The scoring system:

***Scoring System of Stress Index:**

The stress items were respectively scored 5 to 1 for the responses from "strongly agree" to "strongly disagree" for each subscale and domain, and for the total scale, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the part, this was converted to a percent score. $\text{Score \%} = (\text{the observed score} / \text{the maximum score}) \times 100$

The total score was from 99-495 grades:

- Low stress <50%
- Average stress 50-75%
- High stress >75%

*** Scoring System of Parenting Sense of Competence Scale (PSOC)**

It is a 16-item questionnaire their responses are on a 6-point Likert-type scale: "strongly agree", "agree", "mildly agree", "mildly disagree", "disagree", and "strongly disagree". These are scored from 6 to 1. the scoring was reversed for negatively stated items so that a higher score means more satisfaction and more parent efficacy. For each of the two subscales and for the total scale, the scores of the items were summed-up.

$\text{Score\%} = (\text{the observed score} / \text{the maximum score}) \times 100$

The total score was from 16-96 grades:

- Low Competence >75%
- Average Competence 50-75%
- High Competence <50%

Tools validity and reliability

Testing the reliability through Cronbach’s Alpha reliability analysis. To achieve the criteria of trustworthiness of the tool reliability a doctor in statistics checked faces and content of all items. The reliability of the tools was assessed through 10% cases (pilot study) using the developed questionnaire. Measuring their internal consistency by determining Cronbach alpha coefficient, proved to be high as indicated in the following table: Cronbach’s Alpha reliability analysis

Tool	Reliability		Validity		Internal consistency
	Reliability Coefficient	Cronbach’s Alpha	Self validate	Content valiantly	
Parenting stress index	0.825	0.761	0.831	0.792	Good
Parents' competence and ability to raise their children	0.803	0.868	0.871	0.861	Good
Total questionnaire	0.825	0.831	0.887	0.844	Good

Administrative design:

Approval was obtained from Dean of faculty of nursing, Ain Shams University, then written official letter sent to the director of each private centers, include the aim of the study and steps of the nursing intervention program, to get permission to conduct the study.

Ethical consideration:

The ethical research considerations in this study include the following:

- 1) A written initial approval was obtained from the research ethical committee at the faculty of nursing, Ain Shams University.
- 2) Individual oral consent was obtained from each participating parents after explaining the nature and benefits of the study.
- 3) The researcher cleared the objectives and aim of the study to participating parents.
- 4) The researcher maintained anonymity and confidentiality of participating parents.
- 5) Participating parents were allowed to choose to participate or not in the study, and given the right to withdraw at any time from the study without giving reasons.

Operational design

The operational design includes preparatory phase, pilot study, and field work.

Preparatory phase:

It included reviewing of the current and more recent national and international literature reviews concerning current study by using books, articles, periodicals, magazines and internet. After reviewing related literature in various aspects of the problems, the study tools were designed and translated into Arabic language by language experts.

Pilot study:

A pilot study was carried out after the adaptation of the tools and before starting the data collection. It was conducted on (10%) of the expected sample size to test the clarity, feasibility and applicability of the study tools. In addition, it served to estimate the approximate required time for interviewing parents as well as to find out any problems that might interfere with data collection. All participants in the pilot study were excluded later from the actual sample.

Field work:

The researcher attended the learning disabilities centers three days per week, in the afternoon period from 4.00 PM. To 10.00 PM. The data collection lasted one month before starting the program and additionally seven months for sessions starting from the beginning of October 2020 to the end of April 2021. A number of interviewed parents ranged from 2-3 times a week, 7 parents a day in the extension room which attached to the reception. The researcher interviewed each parent individually and briefly explained the nature and the purposes of the study, and asked him/her for participation. All parents were informed that participation is voluntary. All gathered data will be treated confidentially for research purpose only. Then collection of data has begun with the socio-demographic questionnaire, and it was completed by the researcher within 10 minutes for each parent. After that, the parent stress index scale was also completed by the researcher within about 25 minutes for each parent; in the end, the parenting sense of competence scale took about 10 minutes for each participant. So, each parent needs about 45 minutes to complete the questionnaire. Filling the previous mentioned tools was done by the researcher before implementation of the nursing intervention program according to the parents understanding. All information gathered through data collection tools was interpreted to identify the individualized learning needs. The researcher set up a teaching sessions plan based on identified needs covering all objectives, these objectives were categorized into general and specific objectives and the program resources, facilities were allocated (printed material and location of session that best serve the parents). In addition, the researcher determined the teaching strategy (timetable of sessions, teaching methods, media used and parent's activities). The appointment for starting teaching sessions was detected and scheduled with the caregivers for the following weeks within the same previously mentioned days.

Evaluation of the intervention:

Evaluation of outcome of the program was carried out by the researcher immediately after implementation of the program (post- test) then follow - up after three months of program by using the same study tools that have been used in pretest to estimate the effect of nursing intervention program on parents of children with learning disabilities.

Statistical design

Recorded data were analyzed using the statistical package for social sciences, version 20.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean \pm standard deviation (SD). Qualitative data were expressed as frequency and percentage.

The following tests were done:

- Chi-square (χ^2) test of significance was used in order to compare proportions between qualitative parameters.
- Paired sample t-test of significance was used when comparing between related samples.
- Pearson's correlation coefficient (r) test was used to assess the degree of association between two sets of variables
- The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following:
- Probability (P-value)
 - P-value <0.05 was considered significant.
 - P-value <0.001 was considered as highly significant.
 - P-value >0.05 was considered insignificant.

LIMITATION OF THE STUDY:

One of the challenges that the researcher faced in this study was the Corona pandemic and the consequent difficulty of data collection.

RESULT

Table (1): Number and Percentage of the studied sample according to socio-demographic data of children (N=70)

Socio-demographic data of child	No.	%
Age (years)		
6 < 8 years	24	34.3
8 < 10 years	12	17.1
10 - 12 years	34	48.6
Mean±SD	9.29±2.51	
Sex		
Male	42	60.0
Female	28	40.0
School		
Governmental Education	47	67.1
Private Education	7	10.0
<i>Special Education Service</i>	16	22.9

Table (1) shows that the mean age of the studied children was 9.29±2.51 with higher percentages of males than females (60% than 40%) respectively. Regarding school 67.1% of them were from governmental education.

Table (2): Number and Percentage of studied sample according to socio-demographic data of parents (N=70)

Socio-demographic data of parents	No.	%
Father		
Age (years)		
20-< 30 years	3	4.3
30-< 40 years	40	57.1
≥40 years	27	38.6
Mean±SD	38.43±10.38	
Level of Education		
Preparatory	16	22.9
Diploma	28	40.0
University	26	37.1
Mother		
Age (years)		
20-< 30 years	24	34.3
30-< 40 years	39	55.7
≥40 years	7	10.0
Mean±SD	32.57±8.79	
Level of education		
Read and write	9	12.9
Preparatory	5	7.1
Diploma	30	42.9
University	26	37.1

Concerning parents socio-demographic data table (2) showed that the mean age of fathers of the studied children was 38.43 ± 10.38 , and regarding fathers` level of education, (40%) of them had diploma school. While, the mean age of mothers of studied children was 32.27 ± 8.79 , and more than half of them (42.9%) had diploma school.

Table (3): Number and Percentage of the studied sample according to socio-demographic data of parents (N=70)

Socio-demographic data of parents	No.	%
Family Number		
≤4	39	55.7
>4	31	44.3
Residence		
Rural	39	55.7
Urban	31	44.3
Family Income		
Enough	20	28.6
Not Enough	29	41.4
Enough and more	21	30.0
Caregiver		
Mother	32	45.7
Father and mother	38	54.3
Parent-child relationship		
Usual	36	51.4
Spoiled	20	28.6
Violent	14	20.0
Parent relationship		
Normal	52	74.3
Problem	18	25.7

Concerning family data, table (3) shows that more than half of families (55.7%) had less or equal 4 members, and rural families have the same percentage. Family income was not enough in (41.4%) of families. In more than half of families (54.3%) caregivers were father and mother. Parent-child relationship was usual in more than half of families (51.4%). Additionally (74.3%) of parents had normal parent relationship.

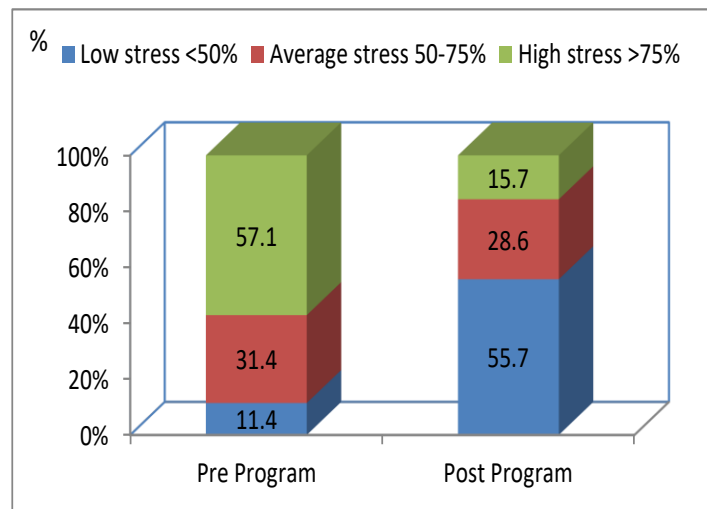


Fig. (1): Parenting stress index at Pre-program and Post-Program

Figure (1) clarifies that, 57.1% of studied parents had high stress at pre-program, which decreased to 15.7 % during post-program.

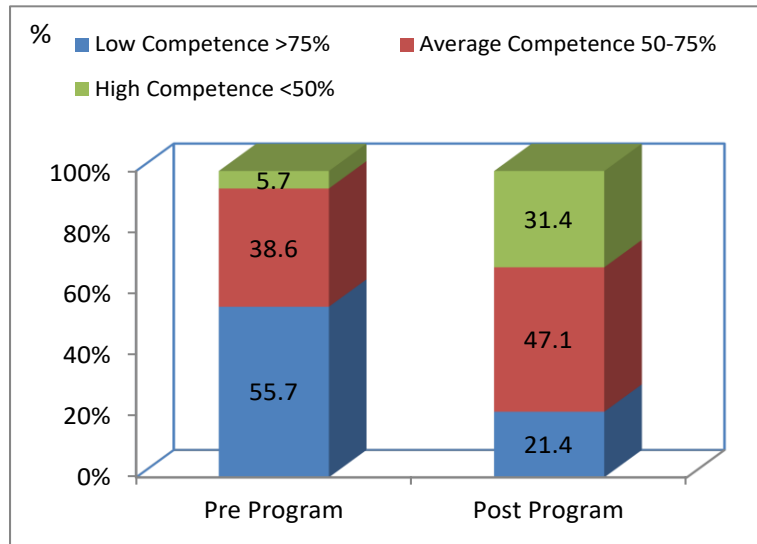


Fig. (2): Parents' competence and ability to raise their children at Pre-program and Post-Program.

Figure (2) illustrates that only 5.7% of parents had high competence at pre-program, which increased to 31.4% during post-program.

Table (4): Relation between parents low, average and high regarding before level of stress index and their before level of competence (n=70)

Level of Competence (before)	Level of stress index (before)						Total		Chi-square test	
	Low stress		Average stress		High stress					
	No.	%	No.	%	No.	%	No.	%	x2	p-value
Low Competence	2	25.0	10	45.5	27	67.5	39	55.7	6.528	0.075
Average	4	50.0	11	50.0	12	30.0	27	38.6		
High Competence	2	25.0	1	4.5	1	2.5	4	5.7		
Total	8	100.0	22	100.0	40	100.0	70	100.0		

p-value >0.05 NS

This table 4 shows that there were no statistical significant relations between studied parents low, average and high regarding before level of stress index and their before level of competence.

Table (5): Relation between parents low, average and high regarding after level of stress index and their after level of competence (n=70)

Level of Competence (After)	Level of stress index (After)						Total		Chi-square test	
	Low stress		Average stress		High stress					
	No.	%	No.	%	No.	%	No.	%	x2	p-value
Low Competence	0	0.0	4	20.0	11	100.0	15	21.4	67.424	<0.001**
Average	17	43.6	16	80.0	0	0.0	33	47.1		
High Competence	22	56.4	0	0.0	0	0.0	22	31.4		
Total	39	100.0	20	100.0	11	100.0	70	100.0		

**p-value <0.001 HS

Table (5) shows that there were high statistical significant relations between studied parents low, average and high regarding after level of stress index and their after level of competence.

Table (6): Correlation between parenting stress index and total score parents' competence and ability to raise their children (n=70)

		Total score Parenting stress index	Total score parents' competence and ability to raise their children
Pre	r	0.216	
	p-value	0.672	
Post	r	0.856	
	p-value	<0.001**	

*p-value <0.05 S; **p-value <0.001 HS

Table (6) shows that there were positive correlation and highly significant between total score of parenting stress index and total score parents' competence and ability to raise their children, with p-value ($<0.001^{**}$) at post-progra

DISCUSSION

As regards to the studied children sociodemographic characteristics the study results in table (1) showed that, the mean age of the studied children with LDs was 9.29 ± 2.51 and slightly less than two third of them were male. Also, it showed that more than two third were from governmental education. This result was in agree with [7] who carried out a study entitled "Health Needs and Use of Services among Children with Developmental Disabilities — United States, 2014–2018" and mentioned that the mean age of the studied children was 9.19 and about two third of them were male and from governmental education.

Regarding socio-demographic data of the studied parents, the results in table (2) illustrated that, the mean age of the studied father was 38.43 ± 10.38 while, the mean age of the studied mother was 32.57 ± 8.79 . Also, the study results showed that less than half of the studied father and mother had diploma school. This result was disagree with results of [8] who studied "Strengths and difficulties in children with specific learning disabilities in Turkey" and found that the mean age of the studied father and mother was 29.6 ± 5.6 and less than two third of the studied father and mother had high school.

Concerning socio-demographic data of family in table (3), the study results showed more than half of the studied family had less or equal 4 members, and from rural. This result wasn't in agreement with [9] who studied "Research into the needs of families who have children with Down syndrome in South Bohemia" and mentioned that, more than half of the studied family had less 3 members and from town.

Also, the results in table (3) revealed that more than one third of the studied family hadn't enough family income and less than one quarter of caregivers were fathers. This result was incongruent with [10] who carried out a study entitled "Demographic and Parental Factors Associated with Developmental Outcomes in Children with Intellectual Disabilities in Spain," and found that more than one third of the studied family had enough family income and caregivers were mother.

Also, the study results in table (3) illustrated parent-child relationship was usual in more than half of families while more two third of parents had normal parent relationship. This result was in similarity with [11] who carried out a study entitled "Sociodemographic and socioeconomic correlates of learning disability in preterm children in the United States" and found that illustrated parent-child relationship was usual in more than half of families while more two third of parents had normal parent relationship. From the researcher point of view, this result might be due to great affection of fathers and mothers for their child.

The results of present study in figure (1) demonstrated that, more than half of the studied parents had high stress at pre-program implementation compared to less than one quarter post-program implementation. This result was in agreement with [12] who carried out a study entitled “The effect of Positive Parenting Program on Mental Health in Mothers of Children with Intellectual Disability in Iran ” and mentioned that, decreased the parenting stress index at post program implementation compared to preprogram implementation. From the researcher point of view, this result might be due to familial behavior modifications as a result of the use of stress management and coping strategies.

Also, the results in figure (2) demonstrated that a few number of the studied parents had high competence pre-program implementation compared to slightly less than one quarter during post-program implementation. This result was similar to [13] who reported that a few number of the studied parents had high competence pre-program implementation compared to slightly less than one quarter during post-program implementation. From the researcher point of view, this result might be due increase knowledge about strategies which decrease stress and enhance competency.

Also, the results in table (4) showed that there were no statistical significant relation between studied parents low, average and high regarding level of stress index and their level of competence before program implementation. This result was in disagreement with [14] who carried out a study entitled “Parenting stress and a sense of competence in mothers of children with and without developmental disabilities in Varaždin, Croatia” and mentioned that there were a statistical significant relation between studied mothers level of stress index and their level of competence. From the researcher's point of view, this result might be due to lack of knowledge about coping strategies before program implementation.

In the light of the study findings in table (5) revealed that there were a highly statistical significant relation between studied parents low, average and high regarding level of stress index and their level of competence post program implementation. This result was supported by [13] who stated that there were a highly statistical significant relation between studied parents level of stress index and their level of competence post program implementation. From the researcher's point of view, this result might be due to parental compliance for training program which enhance knowledge about coping strategies as well as parental sense of competency.

The current study results in table (6) demonstrates that there were positive correlation and highly significant between total score of parenting stress index and total score parents' competence and ability to raise their children. This result was supported by [15] who conducted the study entitled “Sense of Competence as Mediator on Parenting Stress in Indonesia” and found that there were positive correlation and highly significant between total score of parenting stress index and total score parents' competence and ability to raise their children. From the researcher's point of view, this result might be due to

parenting stress can affect parent's attitude and behaviors towards their child as well as parents' competence.

CONCLUSION

The current study concluded that parents of children with L.D had high levels of psychological stress and low level of competences, which improved after implementation of the nursing intervention program with a highly statistical significance difference (p value ≤ 0.01).

RECOMMENDATION

The result of this study projected the following recommendations:

- Replication of the current study on a larger probability sample is recommended to achieve generalization of the results.
- Structured psycho- educational program should be developed for parents having children with L.Ds to increase their knowledge about caring and dealing with L.Ds children.

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